

**Barbara J Falkowski**  
11503 April Ln.  
Tujunga Ca 91042  
(818) 352-2063  
bfalkows@jpl.nasa.gov  
[bjfalkon@gmail.com](mailto:bjfalkon@gmail.com)  
bfalkows@glendale.edu

**Objective:** Physics, Astronomy, or Basic Math Instructor

**EDUCATION:**

<b>2005</b>	<b>MS, Physics</b>	California State University, Northridge
<b>2002</b>	<b>BS, Physics</b>	California State University, Northridge

**EXPERIENCE**

- 7/09-Present **Intern**, Jet Propulsion Laboratory  
Research on whistler mode waves in the Earth's magnetic field focusing specifically on chorus.
- 1/08-Present **Physics and Astronomy Instructor**, Glendale Community College  
Taught basic physics and astronomy courses including lecture and laboratory components. Assigned and graded in class activities and homework. Wrote administered and graded tests and quizzes.
- 2/07-9/08 **Tutor**, The Academic Advantage  
Tutored students in mathematics and English, including explaining difficult concepts, practicing new skills, and finding study material for each student. Subject included pre-algebra, algebra, geometry, literature, and writing skills. Currently I have completed 250 hours.
- 9/05-1/06 **Teaching Assistant, Physics Dept.**, University of California, Riverside  
Taught introductory physics laboratory courses, including fifteen-minute lecture at the beginning of class, demonstrating the proper use of lab equipment, and administering tests and quizzes. Assisted with the lab exercises by resolving confusion and troubleshooting. Graded all assignments and tests and determined final grade. Taught one to two classes a semester of twenty-five students.
- 9/03-5/05 **Teaching Assistant, Physics Dept.**, California State University, Northridge  
Taught introductory physics laboratory courses, including fifteen-minute lecture at the beginning of class and administering regular quizzes. Helped during class period with trouble shooting and explaining concepts. Graded the lab assignments and quizzes. Taught two classes of twenty students.
- 6/99-8/05 **Student Researcher** for the High School Cosmic Ray Observatory (CHICOS), a collaboration between The California Institute of Technology, California State University, Northridge, and University of California, Irvine  
Performed a wide variety of tasks including hardware assembly, programming, webpage design and maintenance, and data simulation and analysis. Assembled a circuits used for data collection. Helped configure the software and data acquisition card and GPS receiver used to time stamp events. Maintained web page, which served as database for large set of cosmic ray shower simulation files. Most simulations were generated using AIRES. Analyzed simulated data to determine if correlation patterns existed in the real data.
- 11/00-6/01 **Student Researcher**, Center for Computational Materials Theory, CSUN  
Investigated material Properties of Silicon-Silicon dioxide interfaces using computer simulations. This involved researching previous and current work on the topic and performing simulations. Used DMOL and CASTEP for simulations. The deposition of a layer of silicon on a silicon dioxide surface was simulated in steps depositing on atom at a time. After each step the resulting properties were analyzed, including band structure, optical properties, and electrical properties. Analysis was done with simulation program and spreadsheets. Presented work at University Research Symposium.

## **TECHNOLOGY SKILLS**

### **SOFTWARE AND COMPUTER LANGUAGES USED:**

MS Word, Excel, PowerPoint, Open Office  
Java, C, C++, Basic, Perl, Html, Shell Scripts  
Latex, Gnumeric, Emacs, Scientific Workplace

Paint, Draw, Corel Draw, Gimp  
Labview, Ghostview, Data Studio  
Matlab, AIREs, DMOL, CASTEP, WinEli

### **Hardware Used:**

Pasco lab equipment  
Tectronics oscilloscope and printer  
Elipsometer  
Various lenses mirrors and lasers

National Instruments data acquisition card  
Motorola Oncore GPS unit  
Sputtering Deposit System

## **HONORS AND ACHIEVEMENTS:**

PCC/GCC CTE Community Collaborative Grant, 2009 and 2010  
Mathematics Problem Solving Workshop  
Graduate Research Scholarship 2004  
Society of Physics Students Research Competition Prize 2001

## **PUBLICATIONS:**

Bruce T. Tsurutani, Barbara J. Falkowski, Olga P. Verkhoglyadova, Jolene S. Pickett, Ondrej Santolik, and Gurbax S. Lakhina, 2011: Dayside Outer Zone (DOZ) Quasi-coherent Chorus: A Polar Study (I), Journal of Geophysical Research.